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Will this medicine work for me? Personalised medicine, homeopathy and prognosis research

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Recent developments in genetics have lead to the emerging field of personalised conventional medicine. Homeopathy has always been 'personalised'. Personal characteristics influence the outcome of homeopathic and conventional medicines. Conventional research is becoming focused on such variables and so should homeopathic research. These developments could open up new ways to improve homeopathy, as well as communication between conventional and homeopathic researchers.

Introduction

The Randomised Controlled Trial (RCT) is considered the highest standard for medical science, but tells us little about how well a treatment will work in an individual patient. A positive outcome from an RCT means that the medicine works better than placebo in the average patient, but the average patient does not exist. Inclusion/exclusion criteria are used to decide which patients can take part in an RCT. For example, those with co-morbidities (a combination of more than one disease) will be excluded because this leads to increased adverse effects and decreased effectiveness of conventional medicines. Such factors mean that the results of most RCTs cannot be applied directly to approximately 60% of patients, because they are excluded from participating in RCTs.[1]

Rapidly increasing knowledge about the human genome in the last decade has lead to increasing awareness that people with the same complaint show different responses to the same medicine. Groups of people with the same disease, using the same medicine, can have different prognoses; these can be identified using prognostic factors[2] (i.e. any measurable characteristic that is associated with a patient's subsequent clinical outcome) such as genetic markers, mental characteristics and specific symptoms.

In conventional medicine only a few prognostic factors that predict different responses to medicines are known.[3] If we prescribe different medicines to specific subgroups with the same condition according to their prognostic factors, we consider this stratified or personalised medicine.[4] Personalised medicine is defined as, "the use of combined knowledge (genetic or otherwise) about a person to predict disease susceptibility, disease prognosis, or treatment response and thereby improve that person's health." An example of stratified medicine in conventional medicine is prescribing trastuzumab (Herceptin) only to suitable patients i.e. breast cancer patients who test positive for human epidermal growth factor receptor 2 (HER-2).

Personalised homeopathy

Personalised medicine sounds familiar to homeopathic doctors: the medicine should fit the person as well as the medical condition. Mental characteristics, specific symptoms and responses to various influences are all present in the homeopathic materia medica and repertories and could be considered as prognostic factors. At the moment, knowledge about 'personalised homeopathy', stored in our materia medica and repertories, is based on expert opinion. It therefore seems logical to apply the novel concepts of prognosis research to homeopathy. There are, however, important differences in this respect between homeopathy and conventional medicine that may require specific research methodology and statistics. In most medical conditions there are only a few subgroups e.g. in the trastuzumab example there are only two subgroups: the breast cancer patients who are positive or negative for HER-2. In homeopathy the number of possible medicines fitting the same condition is often (much) larger.

There is another similarity between personalised medicine and homeopathy: the prognosis is often multifactorial and several prognostic factors have to be combined. An individual's profile of prognostic factors is known as their 'prognostic model'.[5] In homeopathy, repertorisation of the characteristics of the patient constitutes a prognostic model: a table with the selected characteristics and a number of medicines to be considered based on the combination of characteristics.

Prognosis research opens the way to hypothesis-free studies to discover relevant prognostic factors. Such studies investigate the association of large numbers of personal characteristics or genetic variants with outcome. An example: we cannot understand how 'loquacity' could be a relevant factor in treating menopausal complaints, but homeopathic practitioners know from practical experience that 'loquacity' is a strong indicator for the homeopathic medicine Lachesis, frequently indicated for such cases.

This experience can be assessed by scientific research.[6] From this assessment we learned that 'loquacity' occurs five times as much in the population responding well to Lachesis as in the remainder of the patient population. According to the generally accepted statistical principle known as Bayes' theorem, this result indicates that Lachesis is more likely be effective if the patient is loquacious.

EU Horizon 2020

'Integrated, sustainable, citizen-centred care' is part of the EU Horizon 2020 research program exploring, among other approaches, personalised medicine. Homeopathy fits well within this theme of 'citizen centred care'. Although applying for funding from the Horizon 2020 program will be a challenge in itself, medical research is moving in a direction that suits homeopathy very well. The emphasis of Horizon 2020 on personalised medicine indicates increasing recognition of prognosis research and conducting such research on homeopathy could be invaluable in improving effectiveness.

Future research in homeopathy

Prognosis research in homeopathy aims to improve the reliability of the materia medica and repertory. The general idea is that we compare the prevalence of homeopathic symptoms/characteristics in populations responding well to specific homeopathic medicines with the prevalence of these symptoms in the remainder of the population. Using various statistical techniques, these results can be translated into prognostic models in homeopathy. A repertory rubric constructed using this research method has much more power. First, the number of medicines in frequently used rubrics will decrease, because many entries in such rubrics are false. Second, we will be in a position to determine which medicines are less likely to work when a certain symptom is present. Third, the weighting of medicines within a rubric will become more accurate - rather than just 3 or 4 degrees of weighting, each medicine will have a less biased and specific numeric score demonstrating the strength of the symptom.

Prognosis research provides a scientific approach that is well-suited to homeopathy. Until now the emphasis on the individual patient instead of the disease has been a key difference between homeopathy and conventional medicine, but this gap is beginning to close. Homeopathy has a long-standing tradition of expert knowledge and consensus about individualised treatment, but the profession can also benefit from prospective and retrospective prognosis research.[6,7,8]

Conclusions

Such a prognostic model could be the basis of an expert system which would enable patients or doctors with little knowledge of homeopathy to differentiate between several homeopathic medicines. The system would present questions relating to possible medicines for a specified condition. Based on the answers the algorithm calculates the most suitable medicine for the individual patient.

Experienced homeopathic doctors will also profit from more reliable and precise data in their materia medica and repertories. Maybe the most interesting point, however, is the possibility of developing a scientific program that suits homeopathy very well, but is also of interest to researchers in conventional medicine.

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